



(43) International Publication Date
22 September 2005 (22.09.2005)

PCT

(10) International Publication Number
WO 2005/088134 A1

(51) International Patent Classification⁷: F04D 15/00,
15/02

(21) International Application Number: PCT/FI2005/000152

(22) International Filing Date: 15 March 2005 (15.03.2005)

(25) **Filing Language:** Finnish

(26) **Publication Language:** English

(30) Priority Data:
20040401 16 March 2004 (16.03.2004) FI

(71) Applicant (for all designated States except US): **ABB OY**
[FI/FI]; Strömbergintie 1, FI-00380 HELSINKI (FI).

(72) Inventors; and

(75) Inventors/Applicants (for US only): VENKATACHARI,

Srikanth [IN/IN]; No. 41, (Old No. 21), Panchavati, Swimming Pool Extension, 3rd Cross, Malleswaram, IN-560003 BANGALORE (IN). **HOLMBERG, Mikael** [FI/FI]; Kaivurinkuja 8, FI-06450 PORVOO (FI).

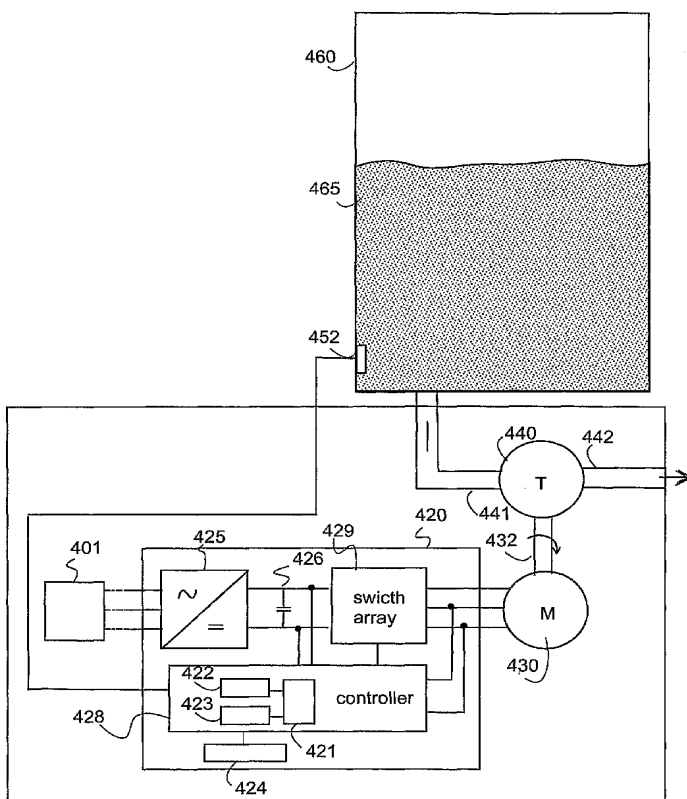
(74) Agent: BERGGREN OY AB; P.O. Box 16 (Jaakonkatu 3 A), FI-00101 HELSINKI (FI).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH,

[Continued on next page]

(54) Title: METHOD AND ARRANGEMENT FOR CONTROLLING A PUMPING STATION



(57) Abstract: The invention relates to a method and an arrangement for controlling a pump station. The invention is preferably applied to a pump station connected to a well or a reservoir (460). The purposes of the invention are achieved with a solution involving measurement of the surface level of a liquid (465) by means of a sensor (452) and controlling the electric drive (401, 420, 430) of the pump (440) to a predetermined speed of rotation when a specific surface level value has been reached. This predetermined rotation speed value is preferably the rotation speed at which the ratio of the flow rate to the consumed power, i.e. the efficiency, is optimal. The measurement of the surface level and the related data processing for control of the pump are performed in a frequency converter (420) in conjunction with the control. The invention is applicable to pump stations comprising one or more pumps.



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.